Klamath National Forest

Best Management Practices

NATIONAL BMPEP

EVALUATION PROGRAM

WATER QUALITY

MONITORING REPORT FOR KLAMATH NATIONAL FOREST – REGION 5

2018 Fiscal Year

Evaluation of Forest Service administered projects including timber sales, roads, and aquatic ecosystem improvements.

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Summary

Fiscal year 2018 was the twenty-seventh year of the Best Management Practices Evaluation Program (BMPEP) on the Klamath National Forest (Forest) and the Forest Service Pacific Southwest Region (Region). This program is designed to evaluate how well the Forest and the Region implement BMPs and how effectively the BMPs control water pollution from National Forest lands for activities including timber, engineering, range, recreation, minerals, and restoration.

In 2018 the Forest Service began the fifth year of implementation of the National BMP Program, which similar to the Region 5 program, integrates water resource protection into management activities occurring across the landscape but is conducted at the national level. The National Core BMPs are written in broad, non-prescriptive terms, focusing on "what to do", not "how to do it". Applicable State, and local requirements and BMP programs, FS regional guidance, and unit Land Management Plans provide the criteria for site-specific BMP prescriptions. National BMP monitoring began in 2013 as a part of a two-year phase-in process to full implementation. In 2018 the Klamath completed National BMP evaluations for Stored Roads, Cable or Aerial Yarding Operations, Completed Aquatic Ecosystem Improvements, and Ground-based Skidding and Harvesting.

The Forest's BMPEP is composed of two sampling strategies. The first is the evaluation of randomly sampled sites. The second strategy is non-random monitoring, in which sites are selected based on management interest in specific ongoing projects. These sites are often evaluated concurrently ("real time") and can be qualitative as well as quantitative. National BMP monitoring evaluations follow National Core BMP Monitoring Technical Guide established by the Washington Office. Each protocol is designed to measure implementation and effectiveness of an activity category that includes from one to six related BMPs. Appendix A is a table that cross-walks each protocol/activity category alpha-numeric code with its name and the BMPs it is designed to monitor.

The National BMP Protocol for 2017 stated that for each forest a minimum of 12 sites up to a maximum of 20 sites are to be sampled over a 2 year period. In 2018 the Klamath evaluated six sites using four prootcols. Most randomly sampled site evaluations require that 1 to 2 winters have passed prior to completing the field assessment.

BMP Implementation was evaluated to determine whether: (1) we did what we said we were going to do to protect water quality; and (2) project environmental documentation and/or contract/permit language was sufficient to ensure water quality protection. BMP effectiveness was evaluated to determine if water quality protection measures met objectives. The objective for meeting most evaluation criteria is keeping all sediment out of channels and near-channel areas. Sediment deposition presence, volume and proximity to the nearest watercourse were used to indicate level of effectiveness.

In 2018 randomly selected National BMPs were fully implemented at 100% and fully effective at 100% of sites evaluated. Table 1 summarizes the results of the BMP Random Site Evaluation Program for 1992 through 2018.

Table 1. R5 BMP Random Site Evaluation Program from 1992 through 2018

Monitoring Years	Total # of Sites Monitored	Sites Meeting BMP Evaluation Criteria			
		Implementation		Effectiveness	
		% Rated Minor departure*	% Rated Fully Successful	% Rated At-risk*	% Rated Fully Successful
1992	53	N/A	55%	N/A	81%
1993	77	N/A	79%	N/A	94%
1994	52	N/A	75%	N/A	89%
1995	77	N/A	83%	N/A	96%
1996	57	N/A	84%	N/A	98%
1997	60	N/A	100%	N/A	98%
1998	54	N/A	65%	N/A	98%
1999	38	N/A	66%	N/A	89%
2000	45	N/A	89%	N/A	96%
2001	64	N/A	88%	N/A	95%
2002	53	N/A	92%	N/A	96%
2003	51	N/A	80%	N/A	90%
2004	53	N/A	94%	N/A	100%
2005	48	N/A	96%	N/A	98%
2006	45	N/A	93%	N/A	100%
2007	57	N/A	98%	N/A	96%
2008	50	N/A	78%	N/A	92%
2009	63	N/A	97%	N/A	98%
2010	59	0%	100%	5%	88%

Table 1 Cont'd. BMP Random Site Evaluation Program from 1992 through 2018

Monitoring Years	Total # of Sites Monitored	Sites Meeting BMP Evaluation Criteria			
		Implementation		Effectiveness	
		% Rated Minor departure*	% Rated Fully Successful	% Rated At-risk*	% Rated Fully Successful
2011	60	7%	85%	3%	92%
2012	61	5%	92%	8%	87%
2013	41	0%	90%	7%	88%
2014	36	0%	83%	6%	83%
2015	28	0%	89%	11%	82%
2016	30	7%	93%	3%	97%
2017	7	N/A	100%	N/A	100%
2018	6	N/A	100%	N/A	100%

*2010 was the first year the “Minor departure” and “At-risk” categories were added

2018 BMP MONITORING REPORT

Randomly Selected Sites

On-site evaluations are the core of the National BMP Evaluation Program. There are 10 different evaluation categories designed to assess a specific practice or set of closely related practices. Though the evaluation criteria vary based on the management activity, the evaluation process is similar amongst activities. The Regional Office annually assigns the type and number of management activities to be evaluated on each Forest. The specific sites for each evaluated management activity are randomly selected from Forest project pools. When BMP failures occur, corrective actions are taken and documented. Statistical analyses are periodically performed from the collective Regional data, and annual reports of Region wide BMP implementation and effectiveness are presented to the State and Regional water boards. The criteria for sample pool development are regionally standardized by activity type and described in the National BMPEP User’s Guide.

In 2018 the Forest Service began the sixth year of implementation of the National BMP Program, which integrates water resource protection into management activities occurring across the landscape but is conducted at the national level. In 2018 the Klamath completed National BMP evaluations for Stored

Roads, Ground-based Skidding and Harvesting, Cable or Aerial Yarding Operations, and Completed Aquatic Ecosystem Improvements.

BMP monitoring strives for an interdisciplinary evaluation of projects and actively involves project proponents and watershed personnel. This interdisciplinary effort provides direct feedback to the project proponent on how well the BMP was implemented and allows for adaptive management on future project designs. Engineer Dave Wohlers, and Fish Biologists Brian Thomas and Maija Meneks conducted the 2018 BMP evaluations.

Methods

National BMP monitoring evaluations followed National Core BMP Monitoring Technical Guide established by the Washington Office. Data gathered for each BMP are used to answer specific questions on BMP evaluation forms. Management activities (e.g. timber projects, roads, prescribed fire, tractor piling) to be evaluated must: 1) be implemented under a NEPA decision; 2) adhere to contract requirements; and 3) have been completed at least one but not more than 3 winters prior to evaluation. In-channel construction BMP evaluations are conducted during the activity and immediately after completion.

The timber project sample pools were developed from a list of timber sales, and vegetation management projects completed the previous year. The roads sample pool was developed from a list of completed roads projects. The aquatic ecosystem improvements sample pool was a list of completed aquatic ecosystem projects on the Forest.

Randomly Sampled Site Results for National BMPs

Six sites were sampled from within four 6th field watersheds on the Forest (Table 2). The following is a breakdown of the type of activities sampled on timber, roads, and aquatic ecosystem improvement projects:

Timber Activities

Timber Activities that were evaluated fell into the following activity groups:

Veg A – Ground-based Skidding and Harvesting: Two sites were sampled on one district. Horse Heli Thin Unit 13C and Unit 41A. Both units passed implementation and effectiveness.

Veg B – Cable or Aerial Yarding Operations: Two sites were sampled on one district. Seiad Thin Unit 17 and Unit 106. Both units passed implementation and effectiveness.

Aquatic Ecosystem Improvements

One Activity Group was evaluated:

AqEco B – Completed Improvements: One site was sampled on one district. Orr/Juanita Lake Fish Habitat Improvement Project. This site passed implementation and effectiveness.

Roads Management

One Activity Group was evaluated:

Road D – Stored Roads: One site was sampled on one district. Road 40N23. This site passed implementation and effectiveness.

Table 3. Summary of 2018 National BMP Implementation and Effectiveness

Form	Project/Site	Implementation	Effectiveness	6th Field Watershed
Veg A	Horse Heli Thin Unit 13C	Implemented	Effective	Horse Creek
Veg B	Seiad Thin Unit 17	Implemented	Effective	Seiad Creek
Veg B	Seiad Thin Unit 106	Implemented	Effective	Seiad Creek
AqEco B	Orr/Juanita Lake Fish Habitat Improvement Project	Implemented	Effective	Butte Creek
Veg A	Horse Heli Thin Unit 41A	Implemented	Effective	Horse Creek
Road D	Road 40N23	Implemented	Effective	Sugar Creek

BMP Field Notes.

The following are notes from the Road 40N23 site survey completed by Maija Meneks and Dave Wohlers on 9/4/2018.

Site selection comments –

RE Question #50:
Current OHV use has been eliminated in 2018 due to purchase of adjoining private property and subsequent closing of gates by the new landowner. This has benefitted 40N23 and noticably decreased erosion along the route. Gates prevent access to private road, which in turn stops vehicle access to the 40N23. However, if gates are re-opened, by current landowner or a future landowner, should the parcel be sold, then 40N23 will again be accessible to vehicular traffic. Prior to gate closure, the major impact to the road was illegal OHV use.

RE Question #78:
See answer to Question #47. Recently installed earthen/boulder barrier is inadequate to deter OHV use should private landowner re-open gates. If OHV use resumes, erosion issues will also resume. Corrective measures include proper installation of the barrier.

Adaptive Management Discussion

Practices That Are Working Well

All of the activities evaluated in 2018 met BMP compliance and were effective at controlling nonpoint pollution. These included all timber sale activities; roads management activities, and recreation sites. For activities where Best Management Practices were fully implemented and effective, no modifications are recommend for future projects.

References

USDA, Forest Service, 2002, Investigating Water Quality in the Pacific Southwest Region: the Best Management Practice Evaluation Program (BMPEP) User's Guide, USDA, Forest Service, Pacific Southwest Region.

Appendix A. BMP Evaluation Procedure Names and Descriptions

Procedure #	*National Procedure Name (BMPs Monitored)*
Vegetation A	Ground-based Skidding and Harvesting (BMPs Veg-1, Veg-2, Veg-3, Veg-4, Veg-6, Veg-7, and Fac-6
Vegetation B	Cable or Aerial Yarding (BMPs Veg-1, Veg-2, Veg-5, Veg-6, Veg-7, and Fac-6)
Roads D	Stored Roads (BMPs Road-1, Road-2, Road-5, Road-6, Road-7, Road-11, and Fac-2)
Aquatic Ecosystems B	Completed Improvements (BMPs AqEco-1, AqEco-2, AqEco-3, and AqEco-4)